

# Earthquake engineering

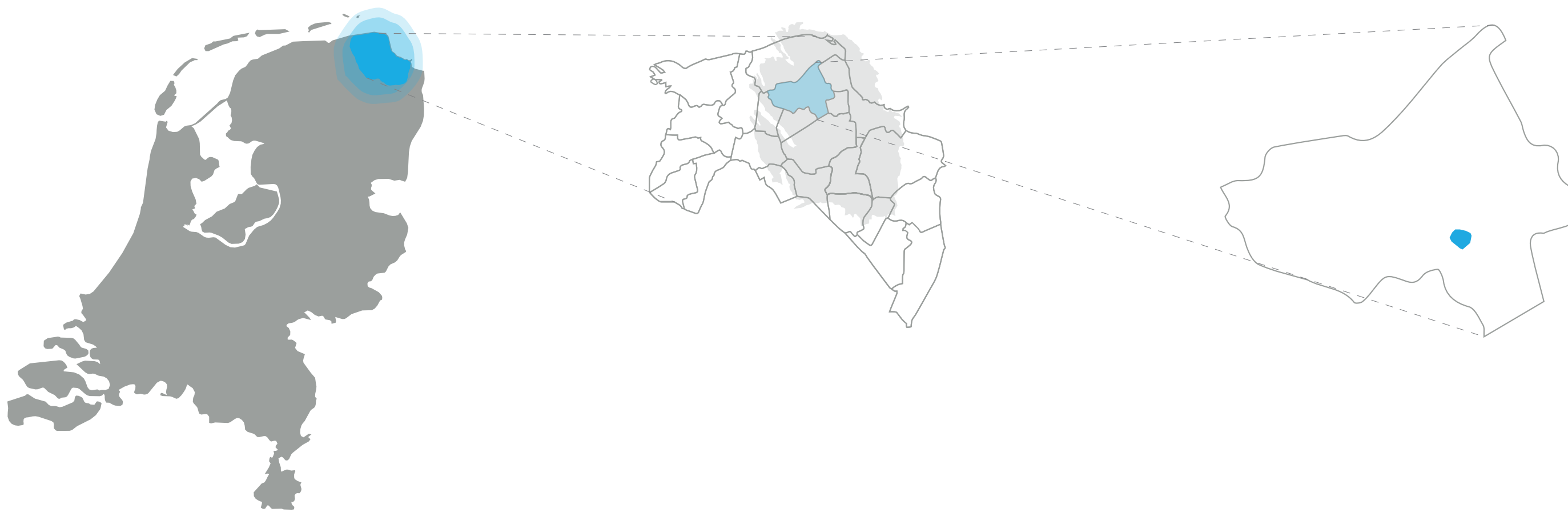
Balancing conflicting objectives

Graduation presentation | Emile van Wijnbergen | 1550454

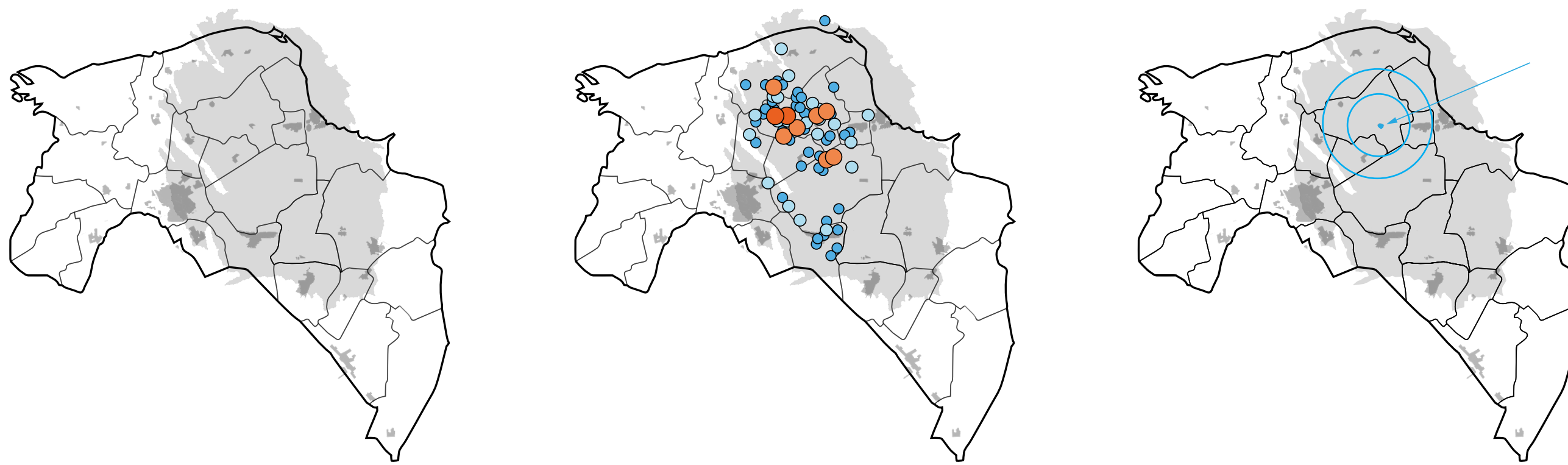
Architecture | Architectural Engineering Studio | date: 03-07-2015

Ir. R. Schroën, Ir. E.J. van der Zaag, Prof.dr.ir. J.C. Paul, ir. Lei Qu

## Context



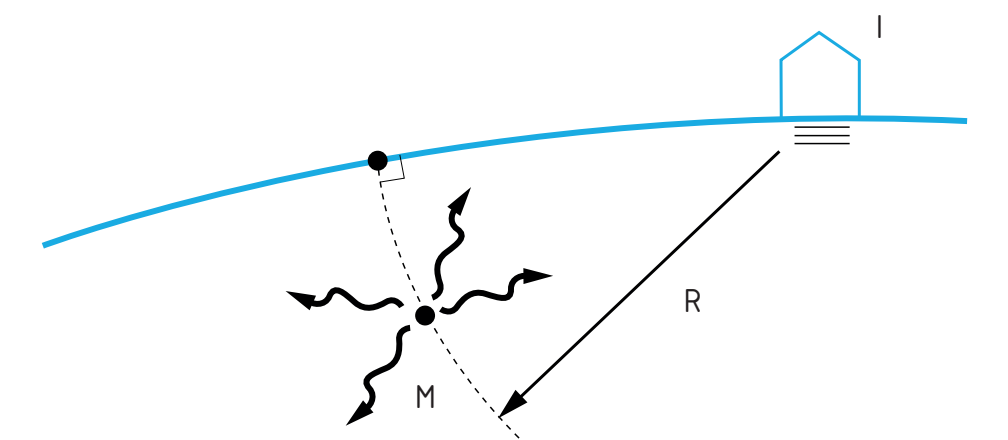
Location | Loppersum, Groningen



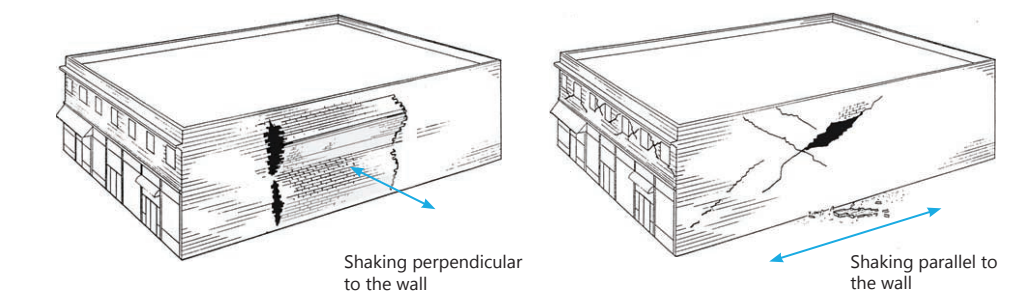
Seismic hazard | location



Production of natural gas in Groningen

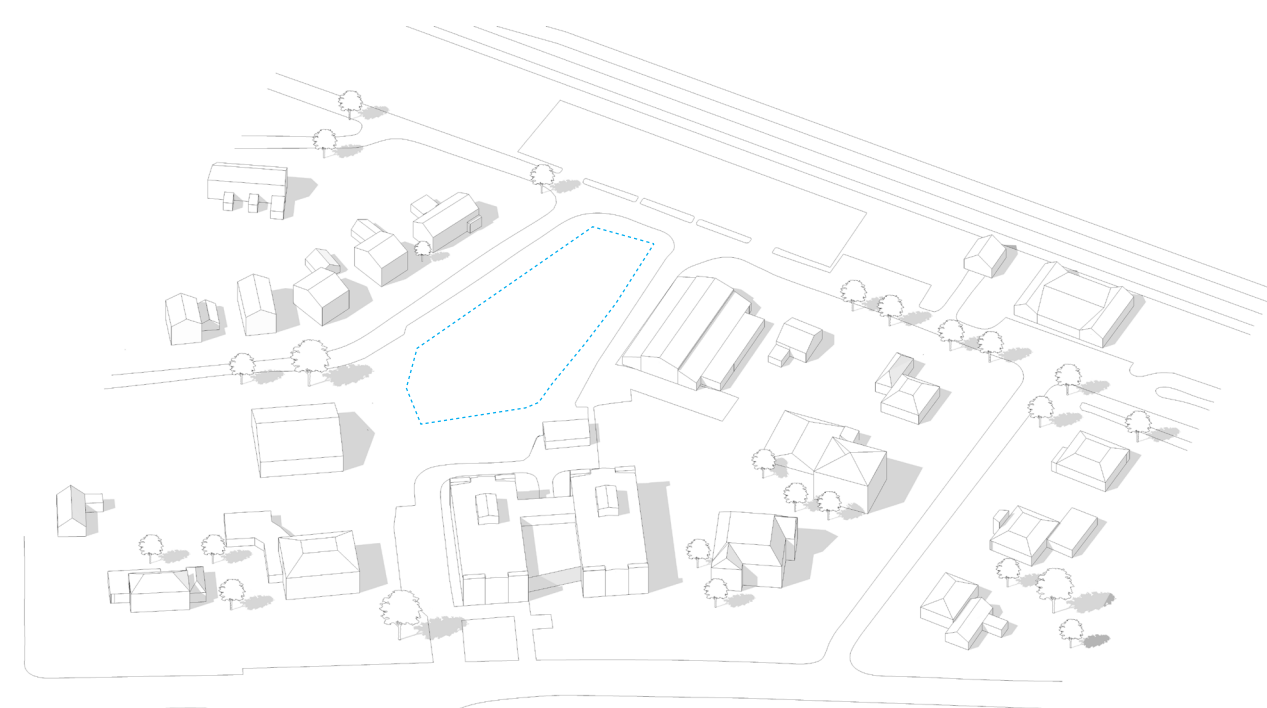


Sudden release of energy - ground accelerations at the surface

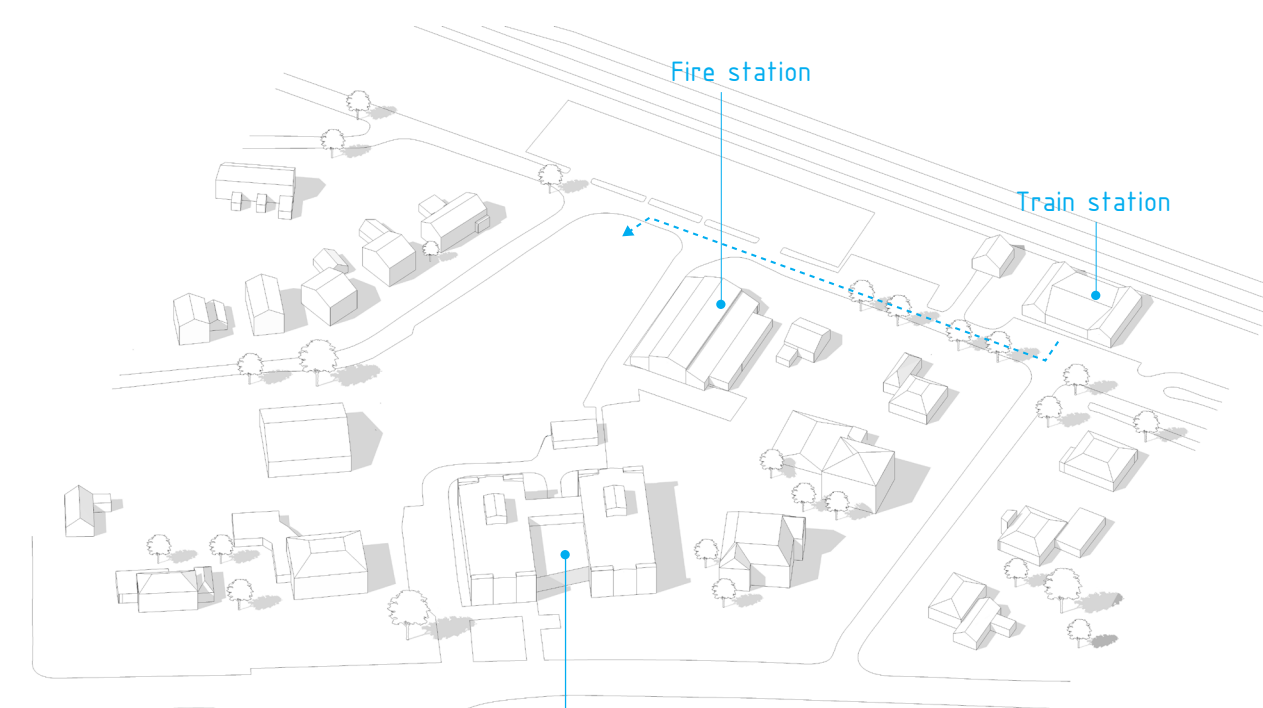


In- and out of plane loading cause cracks of unreinforced masonry walls

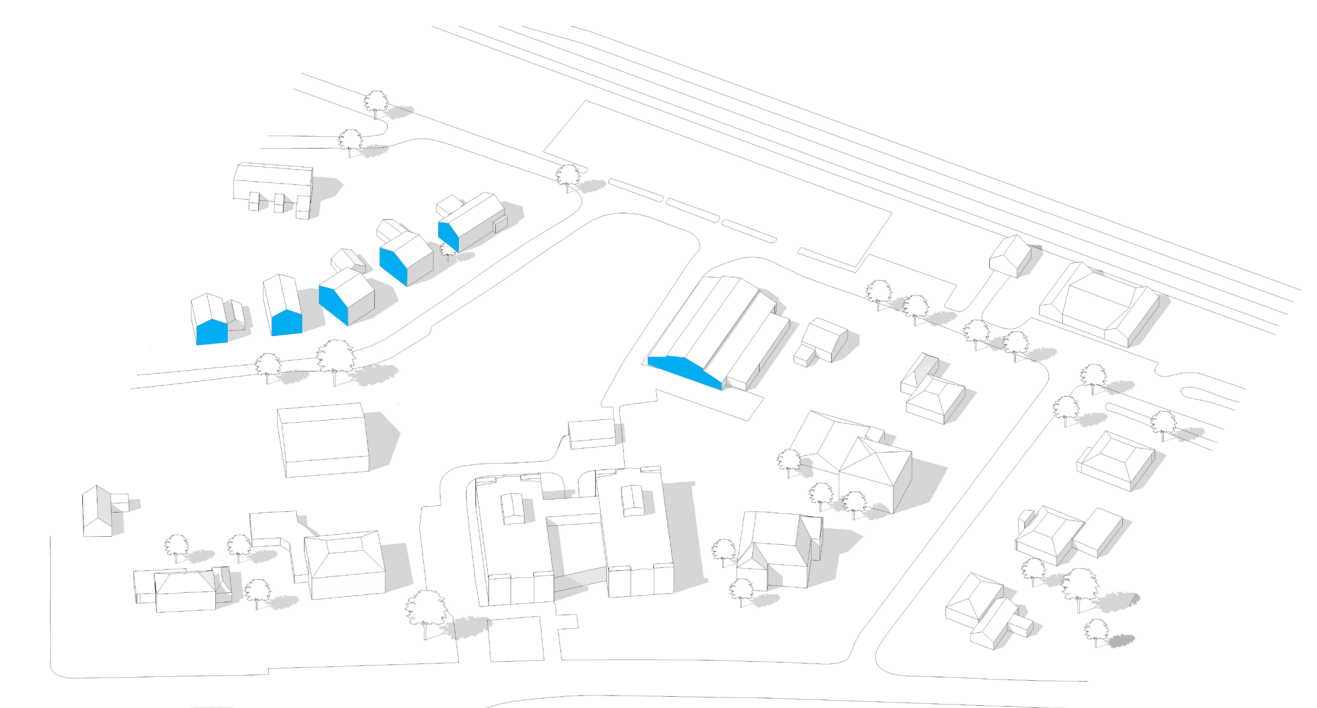
Seismic hazard | cause and consequence



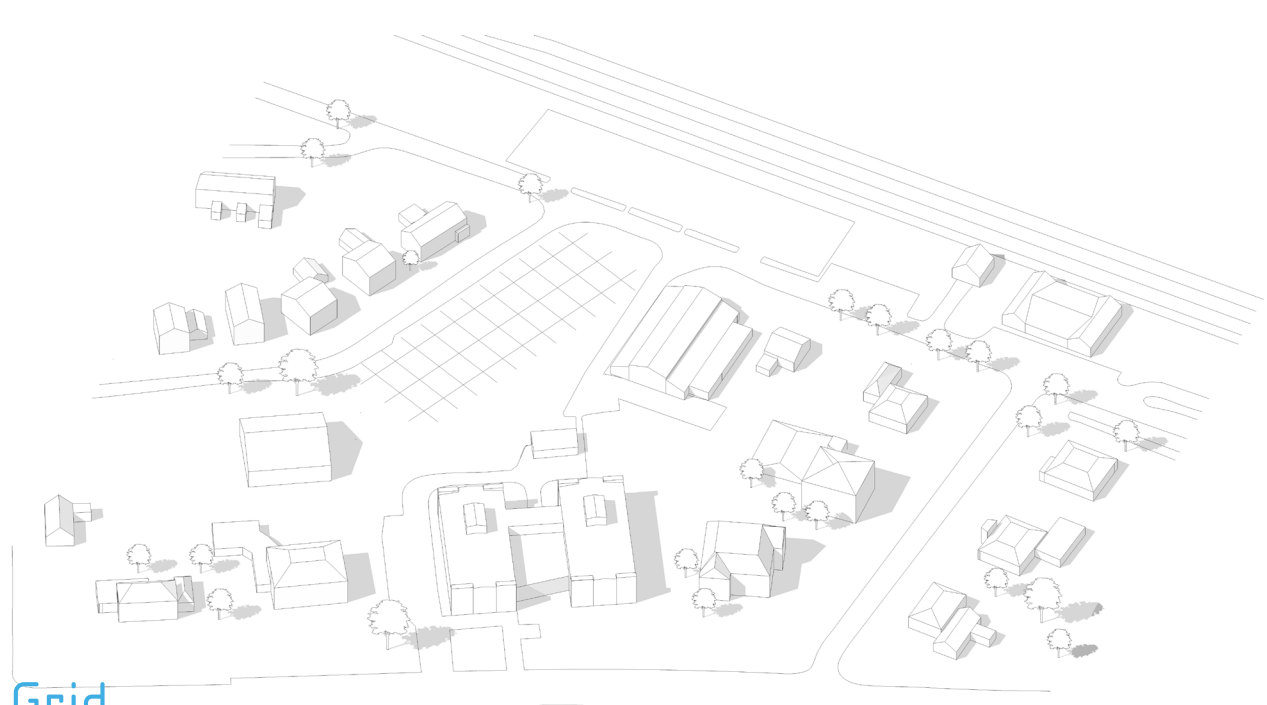
Plot



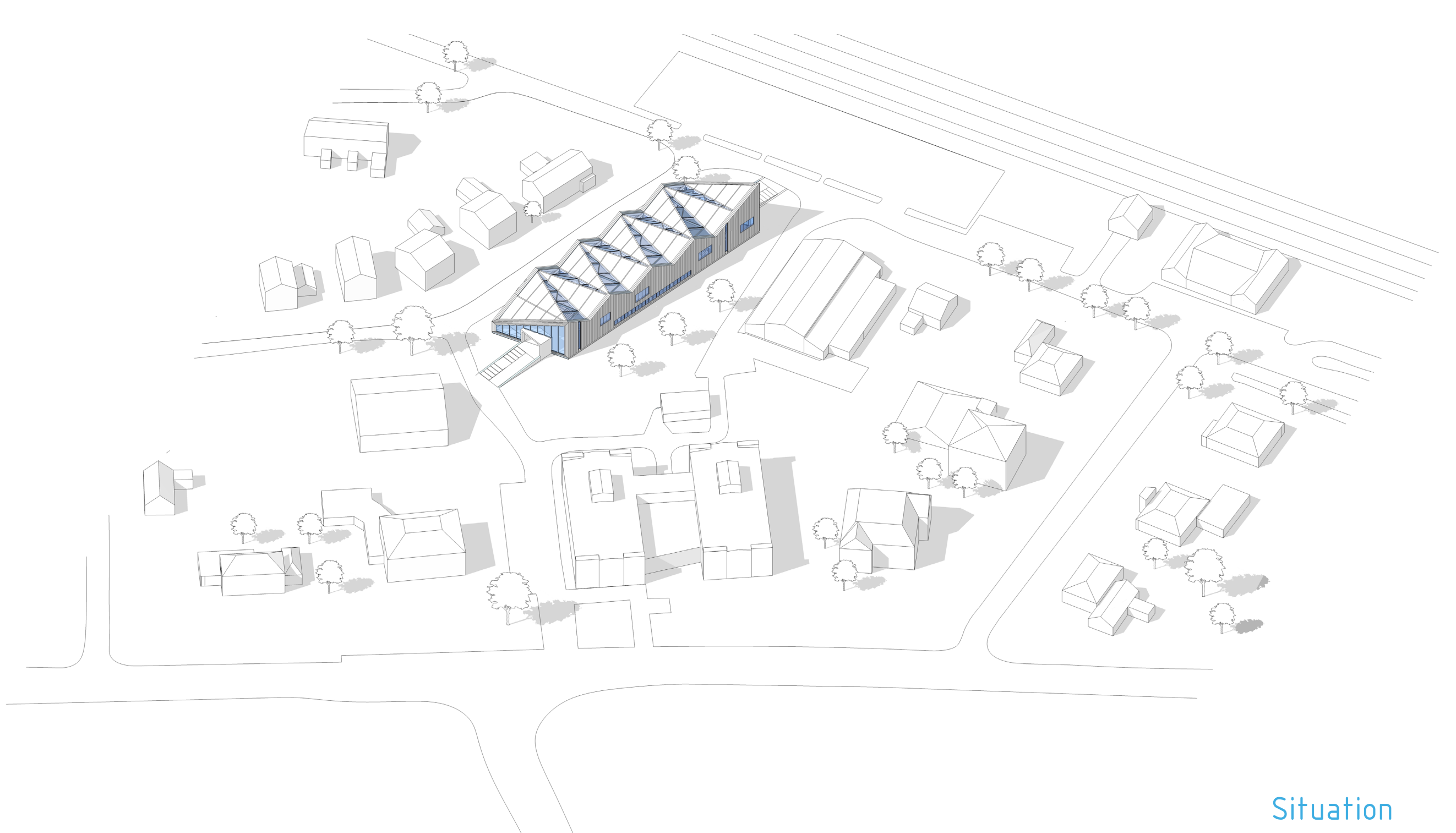
Accessibility



small scale/ pitched roofs

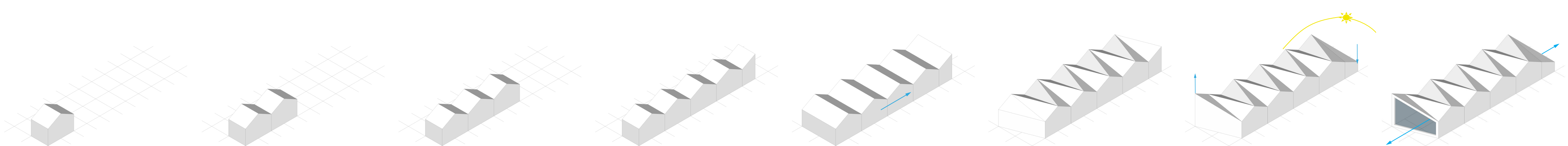


Grid



Diagram

Situation



Mass development | relation to pitched roofs and farms